View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Texas A&M Repository

DISASTER PREPAREDNESS:

EXPANDING POST-DISASTER OPPORTUNITIES

1981

DISASTER PREPAREDNESS:

EXPANDING POST-DISASTER OPPORTUNITIES

In disaster management, opportunities occur where you make them, and the best way to make opportunities is through disaster preparedness. For many years, preparedness was viewed only in terms of emergency response, that is, the reaction to a pending emergency and the activities that would take place in the immediate aftermath. Thus, preparedness concentrated on developing warning and evacuation procedures and limited steps (such as stockpiling) that would speed material aid. A more sophisticated approach is now being taken and typical preparedness activities include predetermination of effective strategies and appropriate modes of involvement, development of tools needed by the emergency staff, development of plans for the actual response, and training for crisis operations. Generally, opportunities for improving the whole range of response, in all phases of a disaster and at all levels of the relief system, are beginning to be exploited.

Concisely stated, the objectives of preparedness are to protect lives and property from an immediate threat, to promote rapid reaction in the immediate aftermath of a disaster event, and to structure the response to both the emergency and longer-term recovery operations. Modern disaster preparedness is based on the realization that disasters are no time to be trying to figure out what to do, and that the most rational and logical course of action can be predetermined and planned.

Preparedness is concerned with activities that occur immediately before a disaster (such as warning and evacuation), during the disaster (such as maintaining communications, protection of critical facilities and lifelines), and immediately following the disaster (including search and rescue, disaster assessment, evacuation and treatment of injured persons, security in the disaster-affected area, restoration of lifelines and critical facilities which may have been damaged by the disaster, and further evacuation of areas threatened by secondary disasters).

Preparedness is normally seen as an activity of the planning and engineering disciplines as well as medical, social and security services. Practical experience has shown that the best groups to assume responsibility for preparedness are operational agencies. For governments, this means ministries that have their own communications and transport, as well as administrative facilities (for this reason, preparedness is often left to the military or paramilitary organizations such as civil defense agencies). Appropriate ministries or other "operational" agencies.

1. CONCEPTS IN PREPAREDNESS

As in mitigation, preparedness activities can be divided into passive and active categories. The more traditional activities that are usually associated with preparedness (including the preparation of disaster manuals, stockpiling of relief goods, and the development of computer lists of resources and personnel) are usually considered passive in nature. Active measures include de-

velopment of comprehensive response plans, monitoring of threatening events (such as hurricane tracking or stream level monitoring), training of emergency personnel, and development of the tools and methods needed for emergency response.

Disaster warning and evacuation measures are usually categorized as active preparedness measures although, in fact, they can also be classified as an initial response to a disaster threat.

2. ELEMENTS OF PREPAREDNESS PLANNING

Preparedness planning borrows from both mitigation and relief program planning procedures. First, the risk areas are determined and mapped; then vulnerable settlements are identified. Next, the responses that would be possible in the event of a disaster are examined. Then, the resources necessary to react are estimated, and the deficiencies are listed.

Once this information has been gathered, a preparedness plan is developed. This includes six steps:

A. Determination of the objectives to be met in each affected sector.

B. Determination of the strategies and approaches necessary to accomplish these objectives and to plug any gaps that have been identified.

C. Development of an implementing instrument. This is usually in the form of a Disaster Preparedness Plan, a formal document which sets out the sequence of activities and the responsibilities of each participant in the response activities.

The purpose of the disaster preparedness plan is to place all activities in a comprehensive framework so that they can be executed in an orderly, sequential, and complementary manner. Normally, activities are divided into increments so that resources can be marshalled at each critical place and stage, and disaster managers can concentrate on the most critical activities at the appropriate time.

Preparedness plans are normally set forth as formal documents. Plans for a small agency or community may be comprised of no more than a brief checklist and description of activities, with the assignment of responsibilities noted on the margins; while a national preparedness plan may include a series of documents, including network diagrams and flow charts of activities, subplans (known as emergency action plans) for each sector, department and/or agency, scores of checklists and emergency procedures to be followed, along with a statement of policies. Whatever form a plan follows, it is important that it be written down, both to serve as a reference and to ensure that no activities are forgotten in the haste of the disaster.

To be successful as an implementing instrument, an emergency preparedness plan must meet the following requirements:

(1) It must present the sequence of activities in a logical and clear manner.

(2) It must be comprehensive and balanced.

(3) It must assign specific tasks and responsibilities for each task.

(4) It must link appropriate organizations and establish mechanisms to bring people and organizations together at the critical points.

(5) It must reflect the policies of the implementing agencies or the national government in a disaster.

D. Development of the tools necessary to effect response and implement the plan. Preparedness tools include:

(1) Establishment of communications networks

(2) Transport capabilities

(3) Localized action plans

(4) Procedures and checklists

(5) Establishment of evacuation routes

(6) Acquisition and strategic placement of search and rescue equipment.

E. Strategic placement of resources to be used in the response. For most agencies, this means stockpiling* or working out relationships with suppliers to enable rapid acquisition and delivery of needed relief materials. Other activities may include:

(1) Establishing lists of materials, personnel and other resources;

(2) Establishment of contingency reserves of funds.

---

*For the international relief agencies, stockpiling has become a much debated topic, with many critics pointing out that stockpiling is only of limited benefit unless carried out in-country. (See "Issues in Disaster Preparedness" later in this paper).

F. Training and drilling are the final elements of preparedness. A preparedness plan and the tools of preparedness are of little value unless people know how to use them effectively. Effectiveness is enhanced first by training, which is the introduction of personnel to the plan and the sequence of activities, as well as to the tools and resources, and instruction on how to use each productively. Drill includes practice activities designed to both routinize each activity (and thereby help reduce time of response) and to help identify the bottlenecks and "debug" the system. Major disasters, gratefully, occur infrequently. Between disasters, people and institutions change, and it is easy for gaps to develop and for people to forget what has been set out in the plan. Periodic review and drill is the only practical way of keeping preparedness activities fresh in everyone's mind and adapting the plan to changing organizational structures and changing needs. (An innovative method of keeping the preparedness plan up-to-date has been formalized in Sri Lanka. Each year at the beginning of the cyclone season, the government holds a "Cyclone Awareness Day". On that day, each government department and non-governmental institution with a disaster assignment is required to review and update its plan and send a notice of any changes to the central disaster coordinating office). In many countries, it is normal practice for critical facilities (such as hospitals and power-generating facilities) to conduct periodic disaster drills which are analyzed to determine what changes need to be made in the disaster plan.

Without constant drill and training, disaster preparedness efforts will come to naught. Recently, a small island nation, which had been struck by heavy flooding, decided to establish a preparedness plan. After several months of painstaking efforts, the new plan was prepared and submitted to the government. Only after it was adopted was it learned that a similar plan had been prepared twenty-five years earlier in response to flooding in the same location. Because there had been no provision for drill or updating, it had been forgotten over the years.

3. COMMON PROBLEMS IN PREPAREDNESS

A general review of preparedness planning and an assessment of response activities carried out under the direction of preparedness plans has indicated a number of common problems, such as:

A. Overcentralization of authority and failure to delegate authority to local levels.

B. Failure to adequately sequence post-disaster activities.

C. Failure to fully structure the emergency response and response actions in the transition phase.

D. Over-reliance on electronic communications, especially telephones.

E. Failure to build in flexibility and an ability to respond to changing situations.

F. Failure to plan adequate and appropriate disaster assessment measures.

G. Overemphasis on speed of delivery of material aid rather than on the process of determining actual needs and priorities.

H. Failure to determine appropriate mechanisms for delivering aid at the appropriate periods.

I. Failure to establish methods for terminating or diverting inappropriate aid.

J. Failure to plan adequate protection of critical facilities.

K. Placing responsibility for preparedness planning in the wrong ministry.

L. Overemphasis on relief activities (as opposed to search and rescue, protection of critical facilities, etc.)

In the implementation of preparedness plans, there have been additional problems in that preparedness agencies often fail to fully involve local people and existing coping mechanisms in planning and training activities.

4. ISSUES IN DISASTER PREPAREDNESS

A. Stockpiling

Critics point to the fact that the distribution of relief supplies rests more on human than technological factors, and that the ability to move materials rapidly between Europe or North America and developing countries is of little consequence if it cannot be distributed rapidly once it arrives. Another issue is the appropriateness of the aid that is stockpiled. While there is no doubt that some equipment, tools and resources are helpful in disasters, much of the aid that is traditionally stockpiled is of little real value to the disaster victims (despite the fact that they may stand in line for hours to receive it).

Tents and emergency shelter items are among most debated cases. As an alternative to tents, some relief strategists have proposed that stockpiles of building materials, especially roofing sheets, be placed near threatened communities. Others argue that, if an agency has the capability to stockpile materials in this manner, it makes little sense to withhold them until a disaster strikes, especially when they could be useful in improving the safety of the existing buildings. They feel that money is better spent on vulnerability reduction than on stockpiling.

The answer to the stockpiling question probably lies somewhere in between all the arguments. Stockpiling can be effective, especially if it is carried out in the country, and there are certainly some materials and resources that are required in every disaster, investment in which it is difficult for a poor country to justify in lieu of other priorities. Medical supplies and equipment especially are costly and often have a short shelf life; thus, it probably makes sense for these to be stockpiled and provided by the international relief system. Donors should be careful, however, to ensure that the aid provided is appropriate and that the ability to stockpile does not result in the transfer of these materials at inappropriate times or in such a way as to block the transport of more critical items.

B. Community Shelters

A preparedness issue that often arises is the question of providing large shelters for persons living in communities or areas threatened by cyclonic storms. Much of the traditional preparedness literature advises officials to designate churches, schools or other large buildings as community shelters to which people can flee when a storm approaches. Proponents often point to similar practices in the United States. While this practice has been fairly successful in the United States, there are two serious drawbacks to using this approach in developing countries.

(1) The question of wind resistance. In the U.S., the buildings which have been designated as shelters were especially designed or reinforced to withstand hurricane-force winds. The designation of similar large-scale buildings in developing countries is practical only if they meet the same design criteria and standards as the U.S. buildings. However, most buildings in the Third World have not been designed to meet these standards, and many of the larger buildings are, in fact, more unstable in high winds than many of the surrounding houses. The record of these buildings when used as shelters is alarming. In Andhra Pradesh, following the cyclone in 1977, three buildings (churches and schools) failed with a total loss of over 400 lives. In Dominica, some experts attribute the relatively low loss of life in Hurricane David (1979) to the fact that there was not enough warning for people to get to the churches which were designated as hurricane shelters. Of the six main churches, four were totally destroyed.

(2) Designating any building in a low lying or flood-prone area as a shelter. Hurricanes can propel storm surges, popularly known as tidal waves, dozens of kilometers inland with such awesome force that no building is safe. Even if the building does survive the pounding of the wave action, the water may rise as high as 10 meters, entirely covering one and two-story buildings. Every building used as a community shelter in the coastal area of Andhra Pradesh which was struck by the surge of the 1977 cyclone was submerged by the surge. In 14 buildings to which people had fled for protection, there were no survivors.

Thus, even if buildings are specially designed or reinforced as shelters, there would still be a danger.

There are other practical issues involved in the question of coastal storm shelters. In rural areas, it would be difficult and cost-prohibitive to build a single large structure to house all the people in a particular region, and it is unlikely that shelters could be distributed widely enough to be close to all threatened families. Furthermore, the success of shelters would still be dependent upon adequate warning and evacuation systems. Unless an adequate early warning system were developed, people in riverine environments or on islands would be unable to get to the shelters in the first place. If these systems can be developed, they should not be oriented to encourage people to remain in the area, but rather to encourage all the people to get to safe areas.

What then is the alternative? Most experts concur that the best measure is adequate warning and evacuation of the threatened area. They argue that in areas along the coast, especially those where possible storm surges could occur, no steps should be taken which would encourage people to remain. They stress that, since the technology is now available to track cyclonic storms, more emphasis should be placed on public information and awareness activities which would encourage people to take evasive action when a storm warning is posted. This should be accompanied by construction of evacuation routes and reception centers for evacuees.

C. Centralization Versus Decentralization

One of the management issues that arises in disaster preparedness is the question of how much centralization of authority is required for the effective administration of preparedness and emergency response activities. When emergency preparedness was a new topic, little was known about a society's response to a disaster, and it was assumed that people confronted by disaster would be panicky and would react to the threat with unusual behavior. It was believed that a strong central office with ultimate authority and power would be the most effective way of controlling the situation and keeping the social fabric together. Krimgold has written:

"Emergency is often used to justify changes in the ordinary procedures for making decisions. It provides an excuse which allows national authorities to decide national questions. In the name of emergencies, property can be confiscated, people can be forced to leave their homes and democratic processes can be circumvented.*

The other danger is that, in order for a highly centralized bureaucratic system to work, it must have a pyramidal and hierarchical administrative framework. In hierarchical bureaucratic systems, there is a loss of information as it is transferred from level to level and when presented as a basis for consideration, it may bear little relevance to the original data gathered.** Furthermore, such a system is dependent on the functioning of the central office. If that is damaged or communications are severed, the whole system will break down.

Our increasing understanding of disaster response by societies indicates an alternative approach to management and argues the case for decentralization. If the goal is for disaster assistance to be compatible and "in phase" with actions that are occurring within the community, preparedness activities and decision-making should also be community-based in origin and concept. It would be difficult for a national or even regional disaster plan to take into account all the local variations found at the community level. Decentralization is important because it allows for localized variations in culture, community and need. Thus, "the shortest possible distance between the people who make decisions and the people who are subject to the result of those decisions should be maintained."***

This is not to say that there is not a need for a central coordinating body for preparedness activities (which should be endowed with a degree of authority) for such an organization can ensure that there is minimal overlap in the provision of services and that all assistance is provided on an equitable basis (if given the proper working tools, such as uniform assistance policies). The role of the central office is to coordinate resources outside the community and help meet the needs identified by the local plan.

---

*Krimgold, Frederick, The Role of International Aid For Pre-disaster Planning in Developing Countries, Avdelningen for Architektur, KTH, Stockholm, 1974, Page 58.

**Op. Cit. Krimgold, p. 60.

***Op. Cit. Krimgold, p. 60.

D. Use Of Defense-Oriented Agencies In A Civil Disaster Role

In many countries, responsibility for civil disaster preparedness is placed in the hands of agencies that are either a formal part of the defense ministry or borrow heavily from military organizations. This is a reflection of common practices in the U.S. and European countries during the 1950's and 60's. During the Cold War, many of the industrialized nations built extensive civil defense networks to respond to civilian needs in the event of nuclear attack. Responsibility for coordinating civil defense activities was normally placed in the hands of military or para-military organizations. As tensions lessened in the 1960's, it was decided to expand the portfolio of these organizations to include a variety of civil disasters and to integrate the resources (which include warning devices, shelters, food suppliers, and search and rescue equipment) into municipal and state preparedness activities. (In the United States, the change is reflected in the progressive name changes from Civil Defense to Civil Defense Preparedness Agency).

There are a number of advantages to using the military in a civil disaster role. Usually, the military has an excellent communications system which is highly mobile. Units of soldiers can operate self-sufficiently for several days at a time and have access to vehicles and heavy equipment that is useful in many disaster roles. Furthermore, the military usually acts in an orderly and disciplined manner, which can have major psychological advantages in a chaotic situation.

On the other hand, there are a number of problems associated with over-reliance on the military. First, military units are not suited to long-term disaster roles. Very few commanders are willing to allow their troups or key personnel to devote extensive time to non-defense related activities for longer than several weeks. Thus, organizations that are dependent upon the military in key sectors must necessarily limit their involvement to the emergency period.

A second problem is that an organization or activity tends to design its method of operation around the key participants. Thus, if the military assumes the major role in disaster response, response activities will reflect military capabilities. A subtle example of this is the emphasis on the use of tents as emergency shelter units. Because military organizations already have the units and can quickly erect them, few alternatives are sought.

Another example is the erection of tent camps for evacuees. In setting up the camps, military engineers will naturally use their own base planning procedures and lay the camps out along military lines, similar to those used for army camps or bivouacs. These plans are designed to be orderly, compact and to achieve a high density. These requirements are suitable for military needs, but they neglect the basic requirements of adequate space for families and the needs of special groups among the disaster victims. Furthermore, a high density may encourage the spread of disease and the development of undesirable social conditions within a camp, all of which can have a negative long-term impact on the inhabitants.

The third problem is precisely that which makes the military so desirable in the first place, that is, its highly centralized control system. The military hierarchy is designed to facilitate control and to centralize authority. A disaster is a time when people need to get together and develop collective responses. A military hierarchy of decision-making can discourage and inhibit this process.

Another common problem is that many civil defense agencies are dominated by senior military officers. This is especially a problem when senior officers who normally hold command positions are assigned. This may result in the civil defense agency being subtly reformed into an operational arm of the military or becoming a shadow command designed to "take over" in a disaster.

The best answer to these dilemmas is to integrate the military's capacities under civilian control. The resources that are needed in a disaster, and that the military can easily provide, should be identified, including communications, medical services, transport, etc. Plans should be made to place small units under the temporary authority of civil officials for specific tasks. If small units are assigned, it will be easier for non-military authorities to manage these resources and local leaders will not feel overwhelmed or threatened by the presence of soldiers in their community.

An effective, and non-threatening, way of integrating military and civil functions is to assign only officers with a technical background to civil defense agencies and, at the local level, to place command of military units under the authority of senior non-commissioned officers.

E. Technical Assistance

Much of the increased interest in disaster preparedness in the developing countries has been stimulated by assistance agencies of the industrialized countries and some of the international consortium of non-governmental agencies. The two most influential organizations involved to date are: U.S. A.I.D.'s Office of Foreign Disaster Assistance and the League of Red Cross Societies.

OFDA has taken the strongest and most valuable steps in aiding the development of national disaster plans. Beginning in the early 1970's, OFDA (then titled "Foreign Disaster Relief Coordinator") began a series of annual seminars for representatives from disaster organizations in Third World countries. Seminar participants heard presentations from noted disaster specialists and visited state and national civil defense agencies in the U.S. In the latter part of the decade, OFDA changed its approach and began holding regional seminars which were more closely attuned to needs in each region. Seminar participants were encouraged to outline and describe their own needs, which OFDA and other organizations could later help them try to meet. One very successful seminar was held in 1979 on St. Lucia and resulted in the formation of a regional Caribbean disaster preparedness network.

The work of the League has been influential, too, not only in establishing preparedness activities as a function of local Red Cross societies, but also as an example to other non-governmental agencies of what can be accomplished through preparedness. The League has also promoted national pre-disaster planning by asking national societies to encourage their governments to develop disaster plans.

Other organizations in the non-governmental sector are beginning to take note of pre-disaster planning possibilities. This is especially true among international voluntary agency coordinating bodies. For example, the World Council of Churches has recently begun to undertake preparedness activities and to encourage its member churches to do likewise. World Vision has also initiated steps along these lines. Very promising attempts at preparedness on the local level are being made by CADEC (Christian Action for Development in the Caribbean), under a special Disaster, Emergency Relief and Welfare Committee supported by technical assistance from Church World Services, OXFAM, and Catholic Relief Services.

Because the profession of disaster preparedness is relatively new, there are a number of recurring problems associated with the provision of technical assistance in the development of emergency preparedness plans which can be identified. First, is the problem of selecting an appropriate model for the emergency preparedness plan. Often a standard model (or models) based on systems used in industrialized countries is suggested as a base from which local derivatives can be developed. Most of the models are based on plans developed in or for the industrialized countries. These plans, which may stress a heavy reliance on highly technical or capital-intensive equipment and resources, are often inappropriate for developing countries.

Although in any preparedness plan there will be recurring organizational, operational and staffing patterns, it is clear that each country or organization requires a unique combination of these elements. Models developed by each country should represent a mechanism which best meets the needs and capabilities of that country and reflects the material and human resources available. The development of models for universal use obscures development and use of local resources. "Constructing models based on the characteristics of the most wealthy and technologically advanced nations must be avoided. The danger of such models is that they lead less developed societies to overlook their own indigenous resources in developing incremental improvements in their disaster preparation, thereby becoming more dependent on outside assistance.*

---

*Charles Fritz, "Report on the 1970 A.I.D. National Disaster Preparedness Training Seminar," Washington, D.C., 1971.

A second set of problems associated with preparedness assistance is due to the question of emphasis. More often than not, technical aid has concentrated only on relief, especially that provided by the international donor community. In fact, it has been pointed out that in certain cases, preparedness assistance has seemed to be more actively designed to facilitate aid by international donors than to focus on the response capability of the disaster-affected community. To be effective, technical assistance should concentrate on the full range of preparedness needs and activities.

The best means of overcoming many of these problems is to make a subtle shift in emphasis. Instead of concentrating on the adoption of specific models or plans, technical assistance should be aimed at providing a conceptual framework within which an organization can review the options and develop its own approach and structure. While it is not possible to design a preparedness model or disaster plan which can be adapted to all situations and environments, it is possible to develop a process which will result in the taking of appropriate measures that will be adequate for most situations. Technical assistance can support local efforts by providing access to resources and information that will facilitate preparedness and response activities. By bringing people together to discuss common issues, problems and experience, measures such as the U.S.A.I.D. Disaster Preparedness Seminars can have a beneficial impact on preparedness activities.

F. Planning The Political Elements

One of the most frequently overlooked aspects of pre-disaster planning is the political element. When a major disaster occurs, the prime minister or president of the nation will naturally want to demonstrate his concern and interest in the situation by taking personal steps to assist. In many countries, a personal representative is designated to be charge of relief or reconstruction functions reporting directly to the chief of state. In some cases, this has led to the formation of entirely new disaster response teams and the circumvention of the networks establishing through disaster preparedness.

In non-governmental agencies, this problem also exists. If a disaster is of an immense magnitude, the head of an organization often feels compelled to visit the scene and make some personal input. Many field directors have seen their carefully developed programs altered or ended before they got off the ground by one of these "state visits" when the chief of the organization demanded quick action and/or key changes based on his assumption of what is necessary in a disaster.

It is quite logical, and indeed proper, that chief executives demand some degree of personal involvement. For disaster preparedness, however, the problem is that the intervention of this nature by persons who are not a part of the pre-disaster planning process can slow, complicate, or even erase painstaking preparedness and mitigation efforts.